

TAREA Environment Policy

1. Introduction

In general, Environment should be seen holistically in the nexus Energy (Renewable Energy = RE / Energy Efficiency = EE) - Environment - Rural & Urban Development (economic-social). The respective policies in this context need to be harmonised in cooperation with all relevant stakeholders. Notably, Government policy-makers are expected to keep this issue in mind, because otherwise the frequent uncoordinated measures of the past would go on.

The motto of the objectives and activities under the Environment Policy can be summarised as follows:

Maximise positive environmental impacts of RE applications, such as CO₂ savings, as much as possible in combination with EE, while **minimising negative impacts**, such as harmful waste especially of solar equipment at the end of its useful lifetime, or potential negative impacts of hydro and wind power projects on environmental assets.

2. Environmental Policy Issues and Guidelines Regarding Specific Renewable Energy Technologies

2.1 Renewable Energy Sources for Power Generation and Other Purposes

- **Solar Energy in terms of PV power for electricity and water pumping as well as solar-thermal heat**

Promote off-grid and gradually on-grid plus captive (industrial/services/housing sectors) applications of clean solar energy, while advocating recycling options for solar equipment parts, especially batteries and panels and adequate disposal of remaining non-recyclable solar equipment waste under proper safety considerations.

- **Small Hydropower (SHP)**

Promote off-grid and on-grid applications of clean SHP, while advocating (i) reduction of possible negative impacts of flooding or claiming lands with valuable biodiversity systems for weirs, dams & diversions, or (ii) for construction of generation & transmission/distribution structures, as well as (iii) health impacts arising from standing water that provides conducive living environment of vectors of diseases like mosquitoes and snails.

- **Wind Energy**

Promote mainly off-grid applications of clean wind power for electricity and water pumping, while (i) advocating recycling options for equipment parts and (ii) keeping potential negative operational impacts on landscape, flora & fauna under control.

- **Bioenergy**

Promote mainly off-grid applications of non/low-polluting sources for electricity supply as far as energy-efficient as well as economically and environmentally competitive against other RE sources, while advocating minimisation of smoke & hazardous gas pollution and other environmental damages & risks.

- **Geothermal Energy**

Focus on promoting potentially viable electricity, heat, tourism and other uses or applications with low impact on environment,

while advocating further studies on reducing negative environmental impacts, especially from high-enthalpy geothermal applications (mainly for power generation) with contaminating sulphurous and other hazardous gaseous and liquid wastes (such as steam, condensates, brines and sludges).

2.2 Cooking Energy

Energy for cooking purposes in households and institutions mainly consists of the following options and sub-options / specific products:

- (i) **Solid** fuels: fuelwood, charcoal, wood & other biomass waste, briquettes, and pellets.
- (ii) **Liquid** fuels: ethanol and plant oils.
- (iii) **Gaseous** fuels: biogas.
- (iv) **Solar** energy stoves/cookers/devices: thermal (active, passive), PV-electric (SHS).
- (v) **Grid Electricity**: various renewable and non-renewable sources from a central or decentralised (mini-) grid.

TAREA strongly advocates for the following measures/activities to avoid environmentally hazardous impacts of cooking energy or at least to keep them under control:

- Support promotion and management of diversified and locality-adapted use of renewable and non/low-polluting sources with energy-efficient stoves/cookers/devices.
- Focus on use of locally available, socio-culturally accepted and affordable resources with low environmental impacts.

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- Avoid and pro-actively control deforestation when using wood-based resources.
- Practice reforestation to ensure sustainable supply of biomass fuels.
- Balance possible local resource shortages with a sustainable supply mix of “clean” source(s) imported into the area from other (preferably relatively nearby) rural or urban areas (targeting to avoid imports from abroad with high production and/or transport costs).

2.3 Other Renewable Energy Waste Reduction Measures

- Promote the renewable energy product life shelf elongation to reduce the rate of waste generation.
- Develop an action catalogue with relevant stakeholders in Tanzania and abroad to handle waste treatment and safe disposal of non-treatable/recyclable residual waste from RE generation and supply.

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